

Data Governance Under Constraints: How Frontline Bank Employees Maintain Customer Data Retention

Authors:

Farhad Karimkhani¹, Ghasem Abdollahzadeh Soreshjani²

¹Department of Management, Maku Branch, Islamic Azad University, Maku, Iran

²Assistant Professor in Department of Economics, Islamic Azad University, Shahr-e-Kord Branch

Corresponding Author:

Farhad Karimkhani

Received: 14-May-2026, Accepted: 29-May-2026, Online First: 30-May-2026

ABSTRACT:

In the era of digital banking, customer data has become one of the most strategic assets of financial institutions, and the quality of its maintenance plays a critical role in decision making, risk management, and regulatory compliance. Nevertheless, frontline bank employees often operate under conditions shaped by infrastructural limitations, time pressure, complex regulations, and multiple operational requirements. This study aims to explain how frontline employees maintain the quality of customer data under such constraints and to examine the role of data governance in this process. Adopting a qualitative and exploratory case study approach, data were collected through semi structured interviews, participant observation, and a review of internal organizational documents. Thematic analysis was used to analyze the data. The findings reveal that employees face a combination of technical, organizational, and environmental constraints that can compromise the accuracy and completeness of data. However, factors such as targeted training, managerial support, process standardization, and the development of a data driven mindset among employees strengthen their ability to preserve data quality. The results indicate that frontline employees' data practices function as a key mediating variable between data governance mechanisms and the final quality of customer information. According to the study's final model, data quality emerges from the interaction between governance structures, operational conditions, and employee behavior. Addressing structural and human dimensions simultaneously can enhance the effectiveness of data governance within banking operations. Beyond contributing to the literature by emphasizing the human factor in data governance, this research offers practical recommendations for improving data management in banks.

Keywords: *data governance, data maintenance, frontline bank employees, organizational constraints, data quality, customer data management, operational challenges, digital banking*

INTRODUCTION:

In recent years, data has emerged as the most critical asset for banks, forming the foundation of a wide range of financial, credit, and regulatory decisions. Despite the expansion of digital technologies, a substantial share of the information that underpins banking operations is still recorded and maintained by frontline employees. As the first point of interaction with customers, these employees play a decisive role: any inaccuracy or omission at the data entry stage can cascade into broader operational consequences, affecting credit assessment, risk management, internal oversight, and even public trust in the bank. This issue becomes even more significant in banking environments characterized by resource limitations, operational pressures, heavy workloads, and increasingly complex regulatory obligations.

Research on digital transformation in the financial sector indicates that the growing dependence of banks on data has not diminished the importance of frontline

staff; rather, their role has become more sensitive and consequential. Studies on data governance within financial systems show that the emerging architecture of modern banking has introduced new modes of supervision, processing, and data management modes in which errors can have serious implications (Campbell-Verduyn, 2017). Within such structures, frontline employees often operate without sufficient resources for precise information handling, yet carry much of the responsibility for ensuring data quality.

Moreover, the integration of new technologies and the increasing reliance on cloud infrastructures and digital platforms have created more complex data environments. Recent research on the implementation of data governance frameworks in banks suggests that even minor inconsistencies in information recorded by employees can disrupt compliance processes and regulatory alignment (Boggarapu, 2024). This underscores the heightened importance of accuracy in data entry and maintenance, revealing that high quality

information is not merely an operational expectation it is a fundamental requirement for risk management and adherence to legal standards.

Alongside regulatory demands, customer expectations have also shifted. Today's banking customers anticipate accurate, seamless, and personalized services, none of which can be delivered without complete and reliable data. Thus, even a small gap in initial data collection can hinder service delivery and lead to customer dissatisfaction. This makes it essential to understand the role of frontline employees in data maintenance and to identify the factors influencing their performance under constraints.

Taken together, these discussions point to the central question of this study: how do frontline bank employees maintain the quality of customer data when operating under constraints, and what factors shape their ability to do so? Addressing this question can provide a clearer picture of the state of data governance in banking environments and support more informed managerial and policy decisions. In addition, a closer examination of frontline employees' roles may lead to practical strategies that enhance data quality, improve organizational efficiency, and strengthen compliance with regulatory standards.

Problem Statement:

In recent years, digital transformation has fundamentally reshaped the role of data in the banking industry, making the quality and accuracy of customer information a central pillar of banking operations. Banks rely heavily on data to manage risk, comply with regulatory requirements, and deliver precise financial services. In many cases, this information is initially recorded and updated by frontline employees. As the starting point of the data life cycle, their role is critical. Any error, disruption, or omission at this stage can generate consequences across the organization, ranging from distortions in credit decisions to inconsistencies in supervisory processes and even erosion of customer trust. This situation highlights the importance of examining the factors that influence how frontline employees maintain customer data.

At the same time, as banks have become increasingly dependent on data, their operational environments have grown more complex. The expansion of digital banking, the development of cloud infrastructures, and the gradual shift toward artificial intelligence-based systems have introduced stricter expectations regarding data quality. Recent studies suggest that evolving regulatory structures and the growing adoption of data driven systems have heightened the sensitivity of data recording and maintenance. Even minor inconsistencies in initial information can disrupt the entire chain of organizational decision making (Boggarapu, 2024). This indicates that data maintenance is no longer a routine administrative task, but rather an integral element of risk management, regulatory compliance, and operational effectiveness.

Alongside technological developments, the nature of data in the financial sector has also evolved. The

growing reliance on data driven financial activities has intensified the demand for accuracy and integrity of information while increasing the level of accountability placed on frontline employees (Campbell-Verduyn, 2016). These pressures become even more challenging when employees operate in environments characterized by organizational constraints, limited resources, slow or inefficient systems, or multiple operational requirements. Under such circumstances, these constraints may not only affect the speed and precision of data entry but may also weaken employees' motivation, attentiveness, and overall capacity to maintain reliable customer data.

Regulatory requirements further add to these challenges. New regulations in digital banking, along with expanding standards related to data security and privacy, have broadened the scope of responsibilities for frontline employees. Research findings indicate that regulatory changes and supervisory pressures have made accurate data recording a non negotiable requirement. Any deficiency in initial information can expose banks to legal and managerial risks (Arner, 2022). This trend underscores the need for clear mechanisms of data maintenance as well as stronger organizational support for frontline staff.

Operational realities also present significant challenges for maintaining high quality data. Many banks continue to struggle with fragmented systems, inconsistent processes, and a lack of clearly defined standards for data entry, correction, and updating. Research suggests that the absence of structured data governance mechanisms not only increases the likelihood of errors in recorded information but can also disrupt managerial decision making and reduce overall organizational efficiency (Hajizadeh, 2021). This indicates that the quality of data maintenance cannot be attributed solely to individual employee performance; rather, it emerges from the interaction of organizational structures, processes, technologies, and regulatory demands.

At the same time, customer expectations have evolved considerably. Personalized services, rapid access to information, and consistency of data across multiple service channels have become standard expectations in modern banking. These expectations cannot be fulfilled without accurate and complete data. Incomplete, outdated, or inconsistent information can disrupt the customer experience and may ultimately undermine trust in the bank. Despite the significance of these issues, much of the responsibility for maintaining customer data still rests with frontline employees. Understanding how they perform this role under constrained conditions therefore becomes an important area of inquiry.

Taken together, these considerations give rise to the central problem addressed in this study: in an environment where banks face organizational, technological, and regulatory constraints, how do frontline employees maintain customer data, and what factors strengthen or weaken their ability to do so? Addressing this question can provide a clearer understanding of data governance at the operational level and support bank managers in making informed

decisions aimed at improving data quality, refining processes, and strengthening governance infrastructures. In addition, examining the mechanisms through which frontline employees perform their roles can offer a useful framework for better understanding the human dimension of data governance and for guiding the development of effective policies in the context of digital banking.

Importance of the Topic in the Banking Industry:

In today's banking industry, data has become a strategic asset that underpins a large share of credit decisions, marketing strategies, risk management practices, and regulatory compliance. To deliver competitive services and respond effectively to customer needs, banks rely on data whose accuracy and completeness begin at the very first point of interaction with customers. Frontline employees therefore play a pivotal role, as they form the initial layer responsible for generating, entering, and correcting data. The quality of their work directly affects the performance of the entire banking structure. Any error or omission in initial information can trigger a chain of operational, legal, and managerial consequences.

The importance of this issue becomes even more evident when considering the emergence of digital banking structures and the growing reliance of banks on intelligent infrastructures. The transition toward data driven banking has introduced stricter standards for managing and maintaining data, increasing banks' sensitivity to the quality of customer information. Recent research indicates that strengthening data governance is one of the key prerequisites for the success of digital financial systems and the improvement of service efficiency (Simamora, 2025). In such an environment, the role of frontline employees has not diminished; rather, it has become even more significant, because the data they enter directly influences the functioning of digital systems and analytical models.

At the same time, expanding regulatory requirements have placed additional pressure on banks to ensure the accuracy, security, and integrity of their data. Regulatory bodies now expect banks to manage the data life cycle transparently and to maintain proper documentation of data related processes. Research shows that without effective data governance mechanisms, banks face serious challenges in complying with these regulations, which further highlights the critical role of frontline employees in maintaining data quality (Arner, 2022). Inaccurate or incomplete data at the point of entry can expose banks to credit, operational, and legal risks.

Changes in customer behavior and expectations have also reinforced the need to address this issue. Today's customers expect their information to remain consistent, updated, and accurate across all banking channels. Poor data quality can disrupt the customer experience and weaken trust in the bank. Research findings suggest that the quality of customer experience

and the performance of banks are closely related to the accuracy of the data recorded in branches (Atashgar, 2019). This relationship indicates that data maintenance is not merely an internal administrative process but also a factor that influences customer satisfaction and the competitive position of banks.

Organizational challenges further emphasize the importance of this topic. In many banks, frontline employees operate under conditions where time constraints, heavy workloads, limited resources, or inefficient systems are part of their daily reality. Such constraints may reduce the accuracy of data entry or discourage employees from carrying out necessary corrections and updates. Studies on organizational behavior among employees in Iranian banks suggest that job pressure and insufficient organizational support can affect the quality of key job responsibilities, including tasks related to data management (Rajabpour, 2021). These findings highlight the importance of examining contextual factors that influence employees' data related behavior.

Ultimately, the significance of this topic lies in the fact that data governance becomes meaningful only when it is effectively implemented at the operational level. Organizational structures, standards, and data policies are effective only when frontline employees are able to follow them in practice and manage data in a way that makes it reliable for decision making, analysis, and oversight. The manner in which frontline employees maintain data represents a crucial link that has received limited attention in many banks, despite having a significant influence on the overall effectiveness of data governance. For this reason, examining employee behavior under constrained conditions can provide deeper insight into real operational challenges, human capabilities, and the practical needs of banks seeking to improve data quality.

Research Gap:

Despite the rapid growth of studies in the field of data governance and the increasing importance of data quality in the banking sector, most research has focused on macro level dimensions such as data architecture, governance models, digital technologies, and regulatory requirements. A considerable portion of existing studies approaches data governance from the perspective of managerial structures or supporting technologies, while the role of operational personnel, particularly frontline employees, has received limited attention. This macro oriented perspective has led to the neglect of human and behavioral aspects of data governance at the operational level, resulting in an incomplete understanding of the real data management cycle.

Although the importance of data quality and its impact on digital banking, decision making, and risk management has been widely documented, much of the existing literature attributes data quality primarily to technological processes or top level policies. However, emerging research suggests that the accuracy and completeness of data at the point of entry play a decisive role in the overall performance of data driven banking

systems. Despite this recognition, the mechanisms through which data quality is formed at this critical stage have rarely been examined directly. The lack of analytical focus on the point of data entry and the behavior of frontline bank employees has created a gap that limits a comprehensive understanding of the data quality chain.

Furthermore, many studies treat frontline employees primarily as executors of procedures and regulations, paying little attention to the psychological, organizational, and environmental factors that shape how they approach data related tasks. Research conducted in Iranian banks has generally concentrated on issues such as workload, employee commitment, and motivation. However, the relationship between these factors and data maintenance or the quality of customer information has not been examined in a systematic manner. This suggests that understanding the data related behavior of frontline employees remains an underexplored area in banking research.

Another gap concerns the growing body of regulations and data related guidelines that banks are required to follow. Only a limited number of studies have examined how these requirements influence the day to day behavior of frontline employees in practice. Most regulatory studies adopt a macro analytical perspective and rarely address their operational implications at the branch or service level. Yet the implementation of data related regulations often takes place precisely at the point of interaction with customers. Without examining this operational layer, an important part of the real impact of regulations on data quality remains insufficiently understood.

Within the domestic literature, several studies have addressed operational challenges in banks, human errors, or system limitations. However, these issues are often analyzed separately and rarely connected to the broader concept of data governance. As a result, the interaction between organizational constraints, operational pressures, and employees' capacity to maintain data remains unclear. Observations suggest that many banks face challenges such as fragmented systems, inconsistent procedures, and limited resources. Nevertheless, few studies have explored how employees manage to preserve or update data under such conditions.

Finally, although data maintenance represents a fundamental component of data governance, existing research has rarely examined this concept from the perspective of the lived experiences of frontline employees. Most scholarly work approaches data governance as a structural or technological framework, while the role of individuals within that framework has been addressed only superficially. Consequently, several fundamental questions remain unanswered, including how frontline employees deal with operational constraints, how they prioritize tasks, how aware they are of the importance of data, and what personal strategies they employ to maintain data accuracy.

Taken together, these gaps suggest that the existing literature has yet to provide a clear and comprehensive

picture of how frontline bank employees maintain customer data under constrained conditions. This research gap highlights the need for a study that focuses on employees' practical experiences, their data related behavior in real working environments, and the interaction between operational constraints and data governance requirements. Such a study can help bridge the gap between theoretical frameworks of data governance and the operational realities of banking institutions.

Research Objectives:

- The main objective of this study is to explain how frontline bank employees maintain customer data under conditions of constraint and to identify the factors that influence the quality and continuity of this maintenance. The research aims to analyze employees' data related behaviors within the context of their everyday work and to uncover the mechanisms they employ when facing organizational, technological, and regulatory limitations.
- In line with this overall aim, the specific objectives of the study are as follows:
- Identify the types of constraints that frontline employees encounter during the processes of recording, correcting, and updating customer data.
- Explain how employees respond to these constraints and how their data related behaviors unfold in practice.
- Examine the individual, organizational, and operational factors that strengthen or weaken data maintenance quality.
- Analyze the role of procedures, guidelines, and operational requirements in shaping employees' data practices.
- Provide an integrated account of the practical mechanisms employees use to preserve data quality in real work conditions.
- Offer recommendations for improving data governance at the operational level based on the study's field findings.

Research Questions:

- What types of constraints do frontline bank employees face in the process of maintaining customer data
- How do these constraints influence employees' data related behaviors and their execution of data focused tasks
- Which individual, organizational, and environmental factors affect employees' ability to preserve data accuracy and completeness
- How do the bank's procedures and operational requirements shape employee performance in data maintenance
- What practical strategies or mechanisms do employees employ to maintain data quality under constrained conditions

- How can insights into employees' data related behavior contribute to improving data governance at the operational level in banks

Conceptual Model:

This study aims to understand how frontline bank employees maintain customer data when they operate under various constraints. To address this goal, the conceptual model has been developed around the interaction of three groups of factors:

Limiting factors, which include organizational, technological, and regulatory constraints

Strengthening factors, which involve individual, motivational, and supportive elements

Behavioral outcomes, which refer to the quality and continuity of data maintenance

Taken together, these elements form a framework that clarifies how constraints shape employee data practices and how these practices in turn influence data quality.

a. Limiting Factors

This group consists of the variables that create challenges for frontline employees in carrying out data related tasks. It includes three key dimensions:

Organizational constraints: limited staffing, heavy workloads, inconsistent procedures, and insufficient managerial support.

Technological constraints: weak information systems, slow digital tools, or the absence of integrated infrastructure for data entry and updates.

Regulatory constraints: complex data related instructions, demanding reporting requirements, or inconsistencies between operational policies and supervisory expectations.

These factors are expected to exert a negative influence on employees' data behaviors and may reduce their ability or willingness to maintain data with precision.

b. Strengthening Factors

This group includes the attributes and mechanisms that enhance employees' capacity to preserve data quality:

Individual factors such as data related knowledge, work experience, sense of responsibility, and organizational commitment

Motivational factors such as managerial support, constructive feedback, and incentive systems linked to data quality

Organizational support such as continuous training, clear guidelines, and a work environment that facilitates accurate entry and correction of data

The presence of these factors can counteract the negative effects of existing limitations and help guide employees toward better data maintenance practices.

c. Data Behavior and Data Maintenance Outcomes:

At the center of the conceptual model is the data related behavior of employees. This includes accuracy in entering information, willingness to correct errors, attention to data consistency, and adherence to principles of security and privacy.

The quality and continuity of data maintenance are direct outcomes of this behavior and reflect the degree

to which employees are able to manage customer data effectively in real working conditions.

d. Relationships Among the Variables

The proposed conceptual model rests on three core relationships:

The impact of constraints on employees' data behavior. As organizational, technological, or regulatory limitations intensify, accuracy may decline and data maintenance may become less consistent.

The moderating role of strengthening factors. Supportive environments, intrinsic motivation, and sufficient knowledge can reduce the negative effects of constraints.

The influence of data behavior on data maintenance quality. Responsible, precise, and informed conduct leads to reliable and consistent data, which is essential for effective data governance.

e. Function of the Conceptual Model in This Study

This model provides a foundation for identifying relevant variables, designing research instruments, and guiding data analysis. It makes it possible to explore how frontline employees balance constraints with data quality requirements and to determine which factors are most critical for improving data governance at the operational level.

Theoretical Foundations and Literature Review:

Data Governance in Banks:

Data governance in the banking sector refers to the set of structures, procedures, and standards designed to ensure the quality, security, accessibility, and integrity of data across all organizational levels. In an environment where credit decisions, risk management, customer analytics, and supervisory requirements all depend on reliable information, data governance plays a central role in safeguarding operations and improving the effectiveness of decisions. Through the implementation of data governance frameworks, banks can treat data as a strategic asset while reducing the risks associated with data fragmentation, unclear ownership, operational errors, and regulatory violations. With the rapid expansion of digital transformation, the importance of coordinated mechanisms connecting technology, operational processes, and organizational goals has grown noticeably in recent years (Simamora and Marbun, 2025).

Organizational, Technological, and Regulatory Constraints Banks face a variety of organizational, technological, and regulatory constraints that can influence the quality of data related operations. From an organizational perspective, frontline employees often experience heavy workloads, a shortage of trained personnel, limited coordination between departments, and the absence of a data oriented culture. Technological barriers include inefficient infrastructures, fragmented systems, poor quality input data, and challenges related to managing the large volumes of information generated in banking activities. In addition, banks operate within strict supervisory frameworks that impose substantial requirements in

areas such as security, privacy, reporting, and data transparency. The combination of these limitations can lead to errors, rework, and reduced staff efficiency, which underscores the need for robust data governance frameworks (Al Afeef et al., 2023).

Role of Frontline Employees in Data Maintenance

Frontline bank employees serve as the first point of contact with customers and therefore act as the primary producers of customer data. Their role is essential for ensuring the accuracy, completeness, and reliability of information. Since frontline interactions generate many key data points, including identity information, transaction records, service requests, and account updates, the precision and care applied by these employees directly affect data quality. Alongside individual skills, factors such as workload, the complexity of instructions, and the performance of technological systems shape employees' data behavior. As a result, frontline employees form the core of dependable data creation in banks, and the quality of customer information often reflects the quality of their performance (Eslami, Jalali and Hosseini, 2018).

Data Quality and Data Lifecycle Management

Data quality is a central pillar of data governance and includes dimensions such as accuracy, completeness, timeliness, consistency, and accessibility. In banking, poor data quality can quickly lead to flawed credit decisions, higher operational risks, disruptions in customer experience, and reduced accuracy in management analytics. Data lifecycle management covers the entire sequence of activities from initial data creation and entry to storage, processing, usage, updating, and finally archiving or deletion. Effective execution of this lifecycle allows banks to manage information in a structured manner and prevent the accumulation of errors or inconsistencies. Without systematic mechanisms for quality control at each stage of the lifecycle, both human and system errors are likely to increase substantially (Hajizadeh, Ghasemzadeh and Kordi, 2021).

Security, Privacy, and Compliance Requirements in Banking

Given the sensitivity of financial information, data security and privacy hold critical importance in banking. Banks face significant threats such as cyberattacks, unauthorized access, misuse of data, and information leaks, which necessitate strict adherence to security standards and data protection regulations. Access controls, encryption, transaction auditing, and continuous monitoring of user activity represent key components of these security requirements. Alongside security, banks must comply with national and international regulations related to data protection, reporting obligations, and transparency. Compliance not only reduces legal and operational risks but also strengthens public trust and supports the legitimacy of banking operations (Gholami et al., 2021).

9-6. Systematic Review of Domestic and International Studies

Dibouliya (2025), in a study on developing an integrated data governance framework for AI enabled

data warehouses, proposed a comprehensive model for managing data security, quality, and integrity. The results indicated that combining data architecture with artificial intelligence enhances monitoring and processing capabilities.

Khalequzzaman and colleagues (2025), in their study on the tensions of digital transformation in banks, highlighted that technology related stress can reduce employee performance, although organizational support can moderate this effect. Their findings emphasized that managing technological stress is crucial for sustaining digital transformation.

Paranahe wage and Lakdinu (2025), in a systematic review on the role of data governance in digital transformation, showed that strong data governance is fundamental to the success of digital initiatives. Their analysis revealed that data architecture, standardization, and policymaking form the core pillars of an effective governance system.

Simamora and Marbun (2025), in their work on strategic information management, demonstrated that organizations can reduce errors and make more intelligent decisions when proper data governance structures are in place. Their results stressed the importance of synergy between data practices and digitalization. Boggarapu (2024), in a study on modernizing banking compliance through AI based data governance in hybrid cloud environments, found that integrating artificial intelligence with cloud infrastructure significantly improves compliance processes. The study concluded that effective data governance is a prerequisite for intelligent regulatory compliance. Al Afeef and colleagues (2023) examined the impact of big data governance on fintech adoption in Jordanian commercial banks. Their findings showed that data governance positively influences fintech development and that organizational culture plays a mediating role in this relationship. The study emphasized that establishing a data oriented culture is essential for effective use of fintech tools.

Arner and colleagues (2022), in their study on financial data governance and the rise of distributed data ecosystems, argued that open banking and emerging data ecosystems are shifting governance models from centralized structures to more network oriented approaches. Their findings highlighted data as a critical infrastructure of modern financial systems. Campbell Verduyn and colleagues (2016) examined big data and algorithmic governance in financial practices and showed that the development of financial algorithms has pushed data driven control to unprecedented levels. Their results indicated that algorithms have gained increasing influence over market behavior.

Synthesis of the Literature and Development of the Theoretical Framework:

The existing literature places strong emphasis on data governance and big data, and on their role in digital transformation, open banking, intelligent compliance, algorithmic governance, and data architecture in cloud based environments. International research highlights

that data governance forms the core foundation of digital transformation and that without standardization, quality control mechanisms, and clear security and ethical procedures, digitalization efforts in banks cannot achieve long term stability. Studies also point to the evolving role of data in the financial system, the growing influence of algorithmic analytics, and the need to modernize compliance and monitoring through intelligent and automated systems.

Taken together, prior research shows that data governance is essential for banking performance. It affects decision quality, risk management, customer experience, organizational agility, employee effectiveness, and the success of digital transformation initiatives. Despite these advances, several notable gaps remain. These include the lack of localized models for examining the role of frontline staff in data quality, the absence of integrated data governance frameworks suited to the context of Iranian banks, and limited exploration of how big data, security, and operational efficiency interact in domestic settings. These gaps highlight the relevance and necessity of the present study. Based on the systematic review of earlier research, the theoretical framework of this study is grounded in the conceptual foundation of data governance and its influence on data quality through the behavior and performance of frontline employees. In this framework, data governance encompasses the policies, processes, and procedures that regulate data quality, security, ownership, and lifecycle management. Governance mechanisms such as data standardization, quality control at the point of entry, information security policies, and compliance requirements create the

conditions needed for generating reliable data within banking systems. Frontline employees hold a central place in this framework. As the first producers of customer data, they shape the accuracy, consistency, and completeness of information. Prior domestic research suggests that job satisfaction, digital competence, continuous learning, organizational citizenship behavior, and customer experience management influence how these employees record and maintain data. International studies further indicate that pressures arising from digital transformation, technological complexity, and insufficient organizational support can weaken employees' data related performance. Therefore, the theoretical framework for this study captures the interaction between data governance mechanisms, the characteristics and behaviors of frontline staff, and the quality of banking data. Within this framework, data governance provides the structure through which rules, controls, and standards guide employees to enter and update data with greater precision and coherence. At the same time, training, empowerment, and supportive organizational practices play a facilitative role in improving data related behavior. Ultimately, data quality is viewed as the final outcome that emerges from the combined influence of governance mechanisms and frontline performance. This theoretical foundation supports the development of the conceptual model and informs the causal relationships that the study seeks to examine.

Research Methodology:

Section	Content
Research Approach and Strategy	This study is applied in nature and adopts a qualitative exploratory case study design. The approach enables a focused understanding of frontline employees' data behavior and the mechanisms influencing data maintenance within the bank, while capturing the complex interplay between organizational constraints and employee practices.
Data Collection and Analysis Process	The study was carried out through a structured process in four main steps.
Step One. Research synthesis and literature analysis	The study conducted an extensive review of research on data governance and employee behavior in banking, using content analysis to extract relevant studies and identify existing gaps and challenges.
Step Two. Participatory observation and lived experience	Given the researcher's role within the banking sector, participatory observation was employed. This provided direct access to operational processes and an intuitive understanding of the daily challenges faced by frontline employees. Field notes were recorded and used to identify points of friction in data maintenance.
Step Three. Expert consultation and interviews with specialists	To validate the preliminary findings and ensure alignment with industry requirements, consultations were conducted with experts and managers in the banking sector. Their feedback on the dimensions of constraints and operational capacities was incorporated into the research model.

Step Four. Thematic analysis and extraction of solutions	Data obtained from the literature review, field observations, and expert opinions were coded using thematic analysis. This process led to the categorization of concerns and the development of practical solutions for improving data governance.
Validity and Reliability	To ensure the accuracy and trustworthiness of the findings, the following techniques were applied.
Expert agreement	Alignment of research findings with the views of banking specialists.
Data triangulation	Combining data collected from multiple sources including the literature, field observations, and staff feedback to reach a comprehensive conclusion.
Reflexivity	Using the researcher's professional experience in banking to gain deeper insight into the phenomenon while minimizing personal bias through reliance on academic sources and expert input.

Research Findings:

This study aimed to explain the role of data governance under constraint and to examine how frontline employees' actions influence the quality of customer data maintenance in the bank. Data were collected through semi structured interviews, field observation, and the review of internal documents, and were analyzed using thematic analysis. During the coding process, initial codes were identified and then grouped into organizing themes, which were ultimately refined into overarching themes. Based on the final analysis, the findings are presented in four main themes and a set of related subthemes.

Identification of constraining factors affecting data quality

The first set of findings shows that customer data quality in the bank is shaped by a range of structural and environmental limitations.

Infrastructure limitations:

Weak integration among information systems, intermittent system outages, slow processing speed, and lack of coordination between operational software were among the major obstacles to accurate data entry. Employees reported that when systems malfunction, data entry is postponed or completed incompletely, increasing the likelihood of error.

Time pressure and workload:

High customer traffic and the demand for rapid service reduce attention to detail during data entry. In busy branch conditions, employees prioritize quick customer service, while secondary checks of information are often overlooked.

Ambiguity in guidelines:

Some employees pointed to the absence of clear instructions regarding data entry standards. Different interpretations of how forms should be completed or how information should be classified have led to inconsistency in the data.

Complexity of regulations and compliance requirements:

Multiple regulatory rules and the frequent revision of directives create confusion in executing precise data entry and updates. This complexity occasionally results in excessive or duplicate data being recorded.

Factors that enhance employees' data behavior:

The second group of findings relates to factors that support and improve the quality of data entry and maintenance.

Targeted training and digital competence:

Employees who have received practical training in system use and data quality demonstrate greater precision in recording information. Developing data literacy emerged as a key prerequisite for data quality.

Managerial support:

Managers who understand the importance of data and emphasize accuracy help create a culture of careful data entry. Ongoing feedback from managers regarding data errors has a corrective effect.

Motivation and organizational commitment:

Employees with a stronger sense of belonging to the organization show higher responsibility toward data accuracy. The findings indicate a positive relationship between job satisfaction and careful data entry.

Process standardization:

Clear checklists, unified forms, and documented procedures contribute to reduced human error and greater consistency across data records.

The behavioral pattern of frontline employees:

The analysis shows that employees' behavior toward data can be explained at three levels.

Minimal level (task completion)

At this level, data entry is viewed merely as an administrative requirement. The focus is on speed and quality control is minimal.

Responsible level (operational accuracy):

Employees not only record information but also review it and correct errors when they notice them.

Professional level (data driven mindset):

At this stage, employees understand the strategic value of data and maintain accuracy even under workload pressure. They view data as an organizational asset.

Organizational consequences of data quality:

The findings indicate that data quality has both direct and indirect impacts on the bank's performance.

Improved credit decision making:

Accurate data reduce errors in risk assessment and enhance the reliability of credit decisions.

Enhanced customer experience:

Complete and updated information enables personalized services and prevents repeated requests for customer data.

Reduced compliance risk and regulatory penalties:

Accurate customer information facilitates adherence to legal requirements and lowers the likelihood of violations.

Increased operational efficiency:

Minimizing duplicate records and system errors saves time and human resources.

Final model derived from the data:

The thematic analysis led to an empirical conceptual model showing that structural and environmental constraints negatively influence employees' data behavior. Supportive and educational factors act as strengthening and moderating elements. Employees' data behavior operates as the mediating variable between data governance mechanisms and final data quality. Data quality directly affects organizational efficiency, regulatory compliance, and customer satisfaction.

The model highlights that data governance is not merely a technological mechanism but an organizational behavioral phenomenon that cannot be achieved without acknowledging the role of frontline staff. The findings show that under conditions of infrastructural constraint and operational pressure, data quality depends largely on the attitudes and behaviors of frontline employees. Effective data governance requires not only the design of policies and standards but also sustained investment in training, motivation, and employee support. The study demonstrates that employees' data behavior plays a central role in linking governance mechanisms to organizational outcomes, and that data quality emerges from the interaction among structure, technology, and human agency.

Discussion and Conclusion:

This study set out to explain how frontline bank employees maintain the quality of customer data under

infrastructural, time related, and regulatory constraints, and to clarify the role of data governance in this process. Drawing on interviews, field observations, and document analysis, a set of themes was identified that illustrates the connections among data governance mechanisms, employees' data related behaviors, and the final quality of organizational data. In this chapter, the findings are interpreted in light of the theoretical literature and the conceptual framework, followed by the overall conclusion and recommendations.

Discussion and interpretation of findings:

Interaction between data governance and organizational constraints:

The findings show that data governance, in practice, is shaped by constraints such as weak technological infrastructure, heavy workload, and regulatory complexity. This aligns with international literature which emphasizes that data governance becomes effective only when supported by coherent infrastructure and implementable mechanisms. In banks operating under constraints, governance policies do not fully translate into operational practice.

Employees' data behavior as a mediating factor

The analysis indicates that data quality depends more on the behavior and attitudes of frontline employees than on any other factor. This mediating role is consistent with global studies highlighting the human element in ensuring data accuracy and standardization. Under constraints, employees with a data oriented mindset maintain accuracy even under pressure, while others engage in minimal task oriented data entry.

The role of training, support, and a data oriented culture
The results show that targeted training, managerial feedback, and a positive organizational culture significantly enhance data quality. Previous research also confirms that improving data literacy, strengthening motivation, and clarifying the strategic role of data improve employee accuracy. Thus, data governance cannot achieve its full potential without managerial support and investment in employee capability.

Multidimensional consequences of data quality:

The study demonstrates that data quality affects credit decision making, customer experience, compliance risk, and operational efficiency. This is consistent with theoretical perspectives that consider data quality the foundation of digital transformation and risk management. As a result, data quality must be viewed not only as an operational concern but also as a strategic priority.

Final model of the study:

The final model indicates that organizational constraints have negative effects on employees' data behavior, training and managerial support strengthen this behavior, employees' data behavior determines data quality, and data quality positively influences key organizational outcomes. This model supports the

theoretical framework and confirms that effective data governance requires attention to human and behavioral dimensions alongside structural mechanisms.

Overall conclusion:

The findings show that data quality in banks results from the interaction of three core elements: data governance structures, environmental constraints, and the data related behavior of frontline employees. Under constraints, employees play the most important role in compensating for infrastructural weaknesses and safeguarding data accuracy. When standards, training, and managerial support are in place, employees are able to record and maintain data with greater precision.

This study shows that data governance is not merely a technological or regulatory construct; it is an organizational and behavioral concept that loses its effectiveness without the active contribution of staff. Therefore, a combined focus on designing governance mechanisms and developing human capability provides the most reliable path toward sustainable data quality in banks.

Responses to the research questions:

Question one:

The findings show that frontline employees encounter several limitations during customer data maintenance, including weak information system infrastructure, time pressure due to heavy customer traffic, ambiguity in some operational guidelines, and the complexity of regulatory requirements. These factors often create conditions where data entry and updates become difficult and prone to error.

Question two:

The results indicate that these constraints directly influence employees' data behavior. During system failures or heavy workload, some employees enter data rapidly, which may reduce accuracy and completeness. In contrast, employees with a data oriented mindset attempt to follow proper standards even in such circumstances.

Question three:

The analysis shows that several factors affect employees' ability to maintain data quality. At the individual level, work experience, digital competence, and awareness of data importance play critical roles. At the organizational level, managerial support, specialized training, and standardized guidelines are influential. At the environmental level, regulatory requirements and operational conditions are key factors.

Question four:

The bank's procedures and operational requirements strongly shape employees' behavior in maintaining data. When guidelines are clear, processes standardized, and systems aligned, employees can record information with greater accuracy. Conversely, complex or

frequently changing regulations may cause confusion and reduce data consistency.

Question five:

The findings show that employees use various strategies to maintain data quality under constraints. These strategies include reviewing information after initial entry, relying on practical experience to detect potential errors, consulting with colleagues, and updating data during less busy periods.

Question six:

The study concludes that understanding employees' data behavior can meaningfully support improvements in operational data governance. Incorporating the role of frontline employees into governance policies, strengthening data literacy training, enhancing technological infrastructure, and simplifying operational processes can promote higher data quality and better organizational decision making.

Recommendations:

Practical recommendations for banks and managers

Targeted training programs: provide regular courses on data literacy, system usage, and the importance of data quality.

Standardizing processes and forms: implement unified checklists and guidelines for data entry across all branches.

Simplifying regulations: redesign directives to ensure frontline staff can apply them quickly and without ambiguity.

Improving technological infrastructure: integrate systems and increase system speed and stability to prevent error causing disruptions.

Consistent managerial feedback: managers should monitor data errors and provide constructive input.

Strengthening a data oriented culture: promote awareness, recognize accurate employees, and emphasize the role of data in decision making.

Establishing incentive systems based on data quality: incorporate accuracy in data entry into performance evaluations.

Suggestions for future research:

Examining psychological factors such as job stress and burnout in relation to data quality.

Comparative studies between public and private banks to identify structural and behavioral differences.

Exploring the impact of digital transformation and artificial intelligence on the role of frontline staff in data maintenance.

Developing a quantitative model based on these qualitative findings and testing the identified relationships statistically.

Studying data governance in other sensitive industries such as insurance and telecommunications to expand and refine context specific models.

REFERENCES:

1. Al-Afeef, M. A. M., Ali, O. A. M., Al-Tahat, S., Malkawi, A. F., Kalbounhe, N. Y., & Al-Azzam, Z. F. (2023). The effect of big data governance on financial technology in Jordanian commercial banks: The mediation role of organizational culture. *International Journal of Data & Network Science*, 7(3).
2. Alipour, L., Nargesian, A., Boudlaie, H., & Mohammadi Moghadam, Y. (2020). Presentation of electronic human resource management model in banking industry. *Public Organizations Management*, 8(3), 69–82. <https://doi.org/10.30473/IPOM.2020.50327.3929>
3. Amirsakhiani, H., Aghaei, A., Raofi, R., & Pourrahimi, A. (2021). A two-stage data mining model for evaluating customer performance in banking and insurance. *Journal of Financial Analysis of Instrument Markets*, 14(2), 1–20.
4. Arefinahad, A., Gholamzade, D., & Vedadi, A. (2023). Analyzing the effective factors of human resource training in government banking. *Governmental Accounting*, 10(2), 125–142. <https://doi.org/10.30473/GAA.2023.69090.1680>
5. Arner, D. W., Castellano, G. G., & Selga, E. (2022). Financial data governance: The datafication of finance, the rise of open banking and the end of the data centralization paradigm.
6. Atashgar, K., & Mirzakhani, F. (2019). *Customer experience management in banks and improving performance indicators*. Scientific Quarterly Journal of Business Management Strategies, 12(4), 78–96.
7. Boggarapu, Narendra. (2024). Modernizing Banking Compliance: An Analysis of AI-Powered Data Governance in a Hybrid Cloud Environment. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*. 10. 2373-2381. 10.32628/CSEIT2410612434.
8. Campbell-Verduyn, Malcolm & Goguen, Marcel & Porter, Tony. (2016). Big Data and algorithmic governance: the case of financial practices. *New Political Economy*. 22. 10.1080/13563467.2016.1216533.
9. Dibouliya, Ashish. (2025). Unified Data Governance Framework for AI-Enabled Data Warehouses in Banking. *European Modern Studies Journal*. 9. 67-75. 10.59573/emsj.9(4).2025.7.
10. Esfandiari, M., & Iman-Khan, N. (2019). *Analyzing customer behavior in the banking industry: A grounded theory approach*. *Economic Modeling Quarterly*, 13(45), 93–114.
11. Eslami, B., Jalali, S. H., & Hosseini, S. F. (2018). *Investigating the structural relationships between organizational service-orientation, frontline employees' job satisfaction, and organizational citizenship behavior: Case of Bank Mellat branches in Tehran*. *Journal of Applied Theories of Economics*, 5(4), 87–104.
12. Gholami, M., Hakimpour, H., Keshavarzpour, A., & Mahmoudzadeh, M. (2021). *The impact of ethical security and privacy on the development of future services in Agricultural Bank*. *Journal of Ethics in Science and Technology*, 16(2), 45–60.
13. Hajizadeh, P., Ghasemzadeh, Y., & Kordi, H. (2021). *The role of big data management in improving decision-making in banking organizations: Case study of Sepah Bank*. *Journal of Banking Management*, 9(3), 45–70.
14. Karimi, A. G., Pourshahabi, V., Naseri, B., & Sargolzaei, A. (2023). Identifying the dimensions and components of smart network governance for the country's banking system. *Journal of Value Creating in Business Management*, 3(1), 25–56. <https://doi.org/10.22034/jvcbm.2023.389645.1076>
15. Khalequzzaman, M., Wang, S., Zhang, N., & Wang, L. (2025). *Digital transformation stressors in banking: Technostress as a mediator and organizational support as a moderator of job performance*. *Acta Psychologica*, 250, Article 105612. <https://doi.org/10.1016/j.actpsy.2025.105612>
16. Mohajeri, S. (2015). *Using a data mining model to predict the behavior of small-business banking customers and determine credit risk*. International Conference on Science and Engineering, Dubai, UAE.
17. Paranehawage, P., & Lakdinu, K. (2025). Data governance's Role in Digital Transformation A Systematic Literature Review.
18. Peygambarmohammadi, M. (2021). *Applying data mining techniques to predict customer behavior in banking: A case study of Tose'e Ta'avon Bank*. Proceedings of the 9th National Conference on Management & Humanistic Science Research in Iran, Tehran, Iran.
19. Rajabpour, E., & Banafi, M. (2021). *Employees' job crafting in Iranian public banks*. *Journal of Iranian Public Administration Studies*, 3(1), 1–20.

20. Sarraaf, F., & Yazdani, M. (2022). Identifying factors affecting open banking. *Shabak Scientific Journal*, 8(2), 1–12. (In Persian)
21. Simamora, D. M., & Marbun, R. C. (2025). Strategic Information Management: Enhancing Organizational Efficiency through Effective Data Governance and Digital Transformation. *INTEGRATIF: Journal of Management Information Systems*, 1(1), 38-47.
22. Taghva, M., Tamtaei, M., Feizal, K., & Shahrabaki, S. (2021). *Identifying change-inducing variables in IT governance processes for cloud governance application*. Scientific-Research Quarterly of Strategy and Management Control, 4(4), 1–?.